Promoting Healthy Weight in Missouri's Children:

A Guide for Schools, Families and Communities

Missouri
Coordinated School Health Coalition

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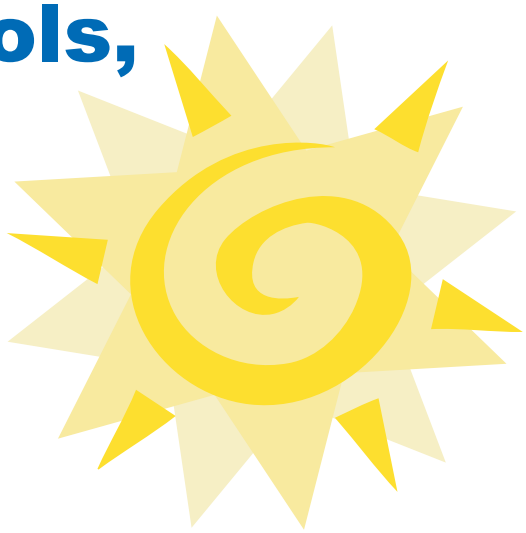

This publication was developed by the Missouri Coordinated School Health Coalition.

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The seeds of chronic disease and overweight adults are sown through unhealthy behaviors initiated during childhood and youth. Overweight children suffer from depression, anxiety, social angst, diabetes, and other health problems, and are more likely to grow up to be obese adults.

Schools are in a unique position to help children learn good health practices. Over 890,000 children attend school every day in Missouri. There is clear evidence that links health and school performance.

Recently, Missouri had two separate but complementary opportunities to work on issues affecting school children's health and academic success. First, Missouri was one of five states to receive a National Governors Association (NGA) grant supporting states' efforts to build partnerships that promote a coordinated school health program which would provide an integrated and systematic approach to meeting children's health needs. In addition, the grant heightens the level of gubernatorial involvement in linking student health and academic success. Second, Missouri is one of twelve states participating in the Healthy Schools Network sponsored by the National Association of the State Boards of Education. The Healthy Schools Network facilitates discussions among state school board members, state education staff, state health agency staff, and local school board members to support a coordinated school health approach.

Missouri participants in the NGA Policy Academy and the Healthy Schools Network Project identified the need to address healthy eating and physical activity for Missouri's children. These individuals began meeting with the Missouri Coordinated School Health Coalition, which was created in 1995 following the Governor's Summit on Comprehensive School Health.

These three groups have been the moving force behind the development of the guidelines, *Promoting Healthy Weight in Missouri's Children: A Guide for Schools, Families, and Communities*. I want to personally thank the Coordinated School Health Coalition for their work and financial support that helped to make these guidelines a reality. I also want to thank Missouri's departments of Elementary and Secondary Education and Health and Senior Services. This document could not have been completed without their help and professional expertise.

The guidelines outlined in *Promoting Healthy Weight in Missouri's Children: A Guide for Schools, Families, and Communities* are an effort to protect the lives and futures of Missouri's children. We hope that state and local elected officials will use these guidelines when developing public policies that affect our young people; that parents will find this to be a helpful resource as they work to create a healthy lifestyle for their families; and that school and community leaders will consider these recommendations as they work to ensure that their communities provide a healthier and safer environment for all of their residents.

Sincerely,

Bob Holden

Bob Holden
Governor

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Executive Summary

Promoting Healthy Weight in Missouri's Children: A Guide for Schools, Families and Communities contains information to help school and community partners develop local policies, programs and environmental supports to promote healthy eating and physical activity. Schools and communities can promote healthy weight in children by:

- Developing policy and program guidelines for schools.
- Strengthening physical activity requirements, standards and programs in schools.
- Implementing nutrition policies and education programs.
- Fostering school and community partnerships that promote regular physical activity.
- Engaging students, school faculty, families and communities in promoting healthy eating and regular physical activity.
- Increasing awareness of the problem and of solutions.

The *Guide* was developed by the Missouri Coordinated School Health Coalition, which was formed in 1995 following the Governor's Summit on Comprehensive School Health. The members of the Coalition represent state and local agencies and organizations advocating for Coordinated School Health Programs. A coordinated approach to school health recognizes that healthy children make better students and better students make healthier communities.

The components of Coordinated School Health Programs include:

- A healthy school environment with a safe physical facility and a healthy and supportive environment for learning.
- Planned, sequential K-12 health education.
- Nutrition services offering nutritious school meals and supporting nutrition instruction in the classroom and cafeteria.
- Planned, sequential K-12 physical education.
- School health services including access and referral to community health services.
- Counseling, psychological and social services in the school and links to mental health services in the community.
- Staff wellness to promote students' health by serving as positive role models.
- Family and community involvement.

Children who are overweight because of unhealthy eating and physical inactivity are compromised in their ability to achieve their full academic potential. They are also at a higher risk for long-term health problems. Although excess weight in Missouri's children is a cause for concern, weight loss should not be the central focus for addressing this problem.

Action taken by schools, families and communities to promote healthy weight will contribute to children feeling better and improving their academic success. This action will also promote better lifelong habits of physical activity and healthy eating to lower their risks for major health problems. Bringing school, family and community partners together combines resources and provides an integrated and systematic approach to promoting good nutrition and physical activity, creating an environment for successful learning in the schools and healthy living in the community.

The Healthy Weight Concept

Healthy weight is defined as "a range of weight that puts an individual at a lower risk for certain illnesses and diseases."[1] Weight management plays a vital role in maintaining good health, which in turn enhances the quality of life, both in childhood and as an adult. Keys to achieving and maintaining realistic healthy weight are proper food choices and regular physical activity. These lifestyle choices can help prevent illnesses and the accompanying costs associated with underweight or overweight.

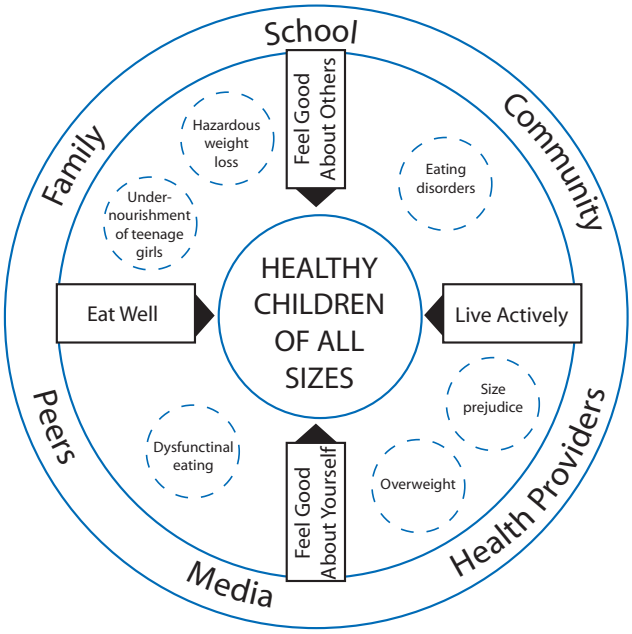
Although excess weight in children is a cause for concern, weight loss should not be the central focus for addressing this problem. The issue of weight in children is not without controversy, as weight is a sensitive issue that has many cultural, social and psychological associations. The primary concern related to weight is children's health, not appearance. Maintaining a healthy weight at critical times in childhood supports normal growth and development.

Interventions must concentrate on modifying those behaviors that contribute most significantly to excess weight. The modifiable behaviors are unhealthy eating and physical inactivity, which are themselves serious chronic disease risk factors. In addition, children must be provided a supportive environment in which healthy choices are valued. Children must also be given the knowledge, skills, self-confidence and opportunities to practice healthy eating habits and participate in regular physical activity.

As illustrated in a reproduction of Frances M. Berg's model,[2] the overall goal of healthy students of all shapes and sizes may be realized when students receive consistent messages and support for:

- Healthy eating
- Physical activity
- Self respect
- Respect for others

These messages should be delivered consistently throughout the day by school faculty and staff, families, community, media and students.



Weight-Related Issues Affecting Missouri Students

Academic Performance

Academic performance is enhanced through good nutrition and physical activity. Schools that incorporate school breakfast programs in their food service see increases in academic test scores, daily attendance and class participation.[3 4 5 6] Schools that offer intensive physical activity programs see positive effects on academic achievement, even when time for physical education is taken from the academic day. These positive effects include increased concentration; improved mathematics, reading and writing scores; and reduced disruptive behaviors.[7 8]

Research indicates overweight adolescent girls were more likely to report being held back a grade and more likely to consider themselves "bad students" than their average weight peers. Overweight adolescent boys were also more likely to consider themselves "bad students" and more likely to quit school. Similarly, underweight boys were more likely to consider themselves "bad students" and more likely to report disliking school than average weight peers.[9] Whether these differences in academic performance and perceptions among overweight students are due to physiological causes secondary to excess weight, (such as missing school due to health problems or inattention as a result of inadequate sleep due to sleep apnea), or the result of psychosocial issues requires further investigation. Certainly the dissatisfaction expressed by underweight boys in addition to overweight children suggests a significant psychosocial component that is linked to a cultural ideal body image.

Social and Psychological Issues

Psychosocial consequences of excess weight in children are of considerable importance. In this society there is a strong cultural value of thinness, which has been persistently perpetuated through numerous channels, such as the media. Overweight children are frequently the object of ridicule and discrimination by their peers and even adults. Studies have shown that children as young as six already demonstrate negative attitudes towards overweight peers, associating them with characteristics of laziness, sloppiness and stupidity.[10 11] Preference tests have also shown that overweight children are ranked lowest by peers when selecting friends.[12] In adolescence, overweight girls have been found to be less likely to be accepted into college, marry, and be economically well off into adulthood.[13 14 15 16]

The impact of excess weight on self-esteem seems to vary among different groups of children. Overweight young and minority children typically do not have a poor self-image.[17] However, overweight adolescents do demonstrate low self-esteem that further decreases with an increase in body fat.[18] In addition, overweight adolescents with poor self-esteem are more likely to engage in high-risk behaviors, such as smoking or consuming alcohol.[19] This poor self-esteem experienced by overweight adolescents often persists into adulthood.[20]

Obesity in adults has been associated with depression, especially in women. In adolescents, depression increases the risk for development and persistence of overweight. Overweight does not predict depression.[21] However, overweight

adolescent girls are more likely to report serious emotional problems, hopelessness and attempt suicide more often than their average weight peers. Similarly, overweight adolescent boys report they are less likely to hang out with their friends and feel their friends do not care about them.[9]

Increased Risk for Chronic Disease

Overweight or underweight can place a child at increased risk for immediate and long-term health conditions. A primary concern is that an overweight child is more likely to become an obese adult. Approximately 26-41% of overweight preschool children will become overweight adults[22] while overweight adolescents have a 70% chance of becoming overweight or obese adults. This percentage increases to 80% if one or more parent is overweight or obese.[23] Overweight persons face an increased risk of chronic diseases such as Type 2 diabetes, insulin resistance, hypertension, stroke, arthritis, heart disease and some cancers.[2] An alarming trend is the increased incidence in children of Type 2 diabetes, previously considered an adult disease.

Children who are underweight as a result of eating disorders are also at risk for immediate and long-term health consequences such as cardiac arrest, osteoporosis and tooth decay. Once considered primarily a risk for young women, the incidence of eating disorders in males is steadily increasing. Approximately 10% of individuals with eating disorders coming to the attention of mental health professionals are male.[24]

Economic Costs

The economic cost of adult obesity in the United States was approximately $117 billion in 2000.[23] These costs reflect both direct and indirect health care costs. The direct costs refer to preventive, diagnostic and treatment services. Indirect costs are the value of lost wages due to illness or disability as well as future earnings lost by premature death.

ECONOMIC COSTS	
Direct	**Indirect**
• Preventive • Diagnostic • Treatment services	• Value of lost wages due to illness or disability • Future earnings lost by premature death

For youth aged six to seventeen years the approximate cost of overweight for 1997-1999 was $127 million. This figure has more than tripled since 1979-1981 when the cost of overweight was $35 million.[25] Unlike the obesity figures for adults, the overweight figures for children do not capture lost productivity or educational opportunity costs for times when children miss school as a result of weight related illness or disability.

If overweight trends continue in children and adults, there likely will continue to be a dramatic increase in chronic disease incidence. As a result, there will also be a corresponding increase in demand for medical services by both the aging and overweight young populations in an already burdened health care system.

Contributing Trends

Physical activity and nutrition are recognized as the major determinants of body weight. Genetics and other factors may influence an individual's weight status, but the dramatic increase in unhealthy weights in the U.S. population is not a result of genetic changes. Lifestyles that include convenience technologies and hectic schedules have helped create an environment that promotes poor food choices and overeating. Labor-saving devices limit physical activity during everyday activities. Advertisements and media messages encourage foods with super-sized portions that are high in calories, while at the same time promoting dieting and "slim-is-in" bodies. Opportunities to be physically active are limited in many neighborhoods because of lack of sidewalks and safe recreational areas.

National Trends

National trends that may contribute to children of healthy weight include:

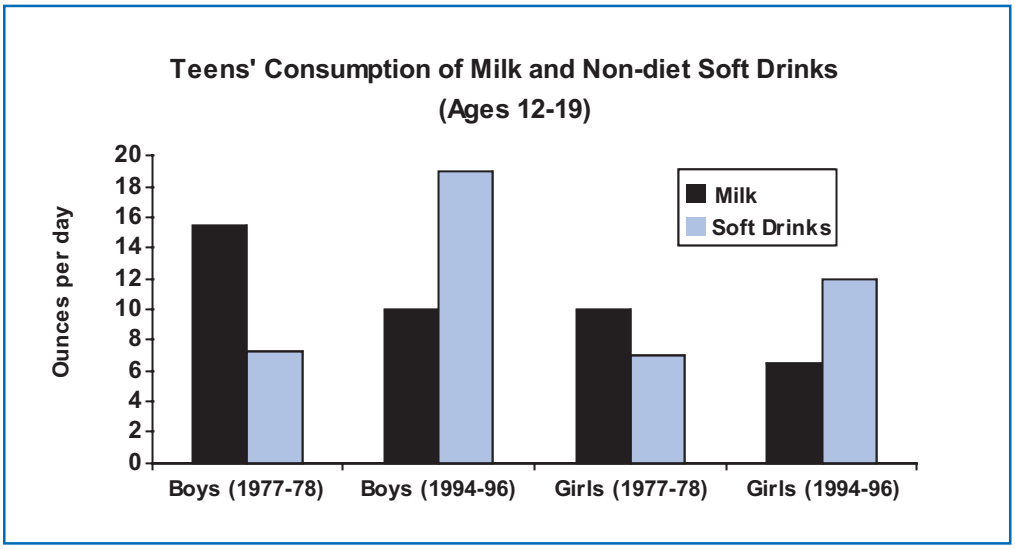
- School breakfasts have shown improvements in relative fat and saturated fat contents.
- Children who participate in the National School Lunch Program and School Breakfast Program (NSLP/SBP) are more likely than non-participants to consume vegetables, milk, and protein-rich foods at lunch and over 24 hours.
- Children who participate in school meals consume less soda and/or fruit drink.[26]

National trends that may contribute to children of unhealthy weight include:

- Eating patterns have changed. With fewer families having a work-at-home homemaker to plan and prepare meals, time and convenience have become a top priority. Family meals appear to be declining, with almost 50% of the American food dollar spent on meals away from home.[27] Eating often occurs in front of the TV or is "on-the-go," such as while driving.
- Approximately 70% of US children consume diets exceeding dietary recommendations for total fat and saturated fat. However, children are not eating the recommended amounts of fruits and vegetables.[28]
- The food choices of most US children do not meet the recommended intake of food groups according to the Food Guide Pyramid.[28] Ninety percent of children age 6 to 11 are not consuming the recommended minimum of five vegetables and fruits per day. The percentage of 2- to 19-year olds who do not meet recommendations ranges from 70% for fruits, grains, meat, and dairy to 64% for vegetables.
- Although US children are more active than adults, a Centers for Disease Control and Prevention (CDC) study showed that 48% of girls and 26% of boys do not exercise vigorously on a regular basis.[29] Vigorous physical activity is lowest in girls and minorities.
- One quarter of all US children watch four or more hours of television each day. Hours of television watched is positively associated with increased body mass index.[29] Television viewing increases inactivity, snacking frequency, and choice of high-fat snack foods.[30]
- Decreased student participation in the USDA-regulated NSLP/SBP.[46]
- Increased availability of foods with lower nutrient quality that compete with NSLP/SBP.[31]

- School districts negotiate exclusive "pouring rights" contracts with soft drink companies.
- Lower fat milk has replaced higher fat milk, but total milk consumption decreased by 36%.[32] The decrease in milk consumption has been accompanied by an increase in consumption of soft drinks and non-citrus juices as evidenced in Figure 1.[33]

Figure 1: Teen's Consumption of Milk and Non-diet Soft Drinks, Ages 12-19.



Trends in Missouri's Children

Weight

Today there are nearly twice as many overweight children and almost three times as many overweight adolescents as there were in 1980. Missouri's prevalence of overweight children ranks even higher than the national average. Nationally, 13% of children and 14% of adolescents are overweight.[23] In Missouri, 21.5% of 5-11 year olds measured in school year 2000-2001 and 22.7% of 12-19 years olds measured were overweight. In contrast, 2.5% of children aged 5-11 years and 1.9% of children aged 12-19 years were underweight in Missouri in the 2000-2001 school year.[34]

Height and weight data are collected on school-age children attending schools that are participating in the Missouri School-Age Children's Health Services (MSCHS) Program. Height and weight data are used to calculate each student's body mass index (BMI). The percent of underweight, over-

The Missouri School Age Children's Health Services (MSCHS) Program provides funding to local school districts and local public health agencies to establish or expand population-based primary and preventive health services through schools, in order to improve the health status of school-age children. The Department of Health and Senior Services administers the program in collaboration with the Departments of Social Services and Elementary and Secondary Education. In 2002, 247 public school districts and 74 non-public schools had contracts.

weight and the percent at-risk for overweight is determined by comparing the students' BMI to age-based and sex specific national norms. Body mass index-for-age is the best measurement tool for assessing weight in children.

Table 1 summarizes the cutoff points for determining weight categories in children. Unlike BMI calculation for adults, the BMI calculation for children is age and gender specific due to the difference in growth rates of boys and girls. Note: Obesity is not an appropriate term to use in reference to children.

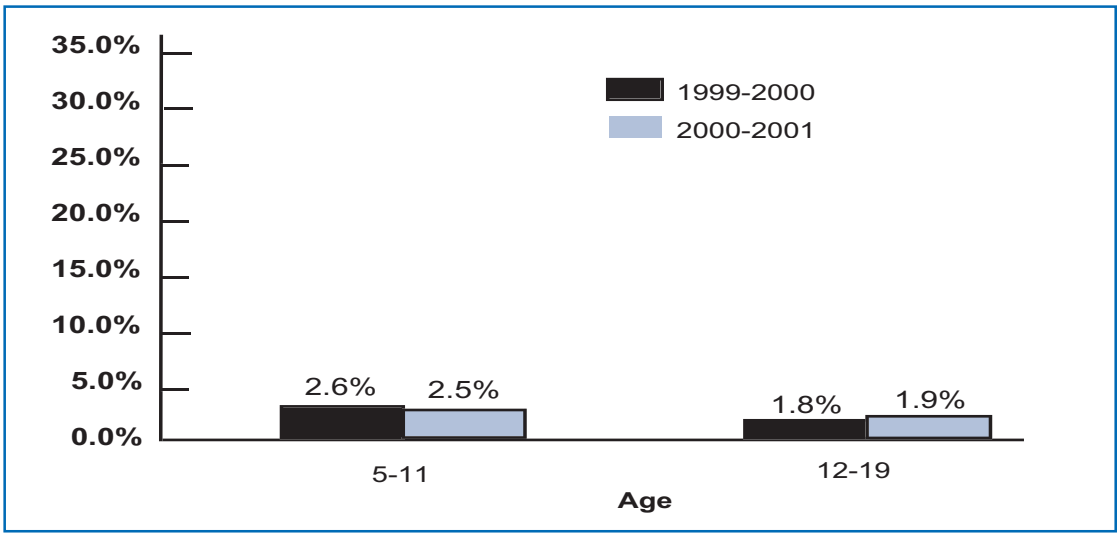
Table 1: Definitions of Weight Categories for Children Age 2 years to 20 Years

WEIGHT CATEGORIES	BMI FOR AGE
Underweight	< 5th percentile
Normal Weight	≥ 5th percentile TO < 85th percentile
At-risk for Overweight	≥ 85th percentile TO < 95th percentile
Overweight	≥ 95th percentile

Source: Centers for Disease Control and Prevention.

The following figures present percentages for the 1999-2000 and 2000-2001 school years for the 5-11 year old and 12-19 year old populations.

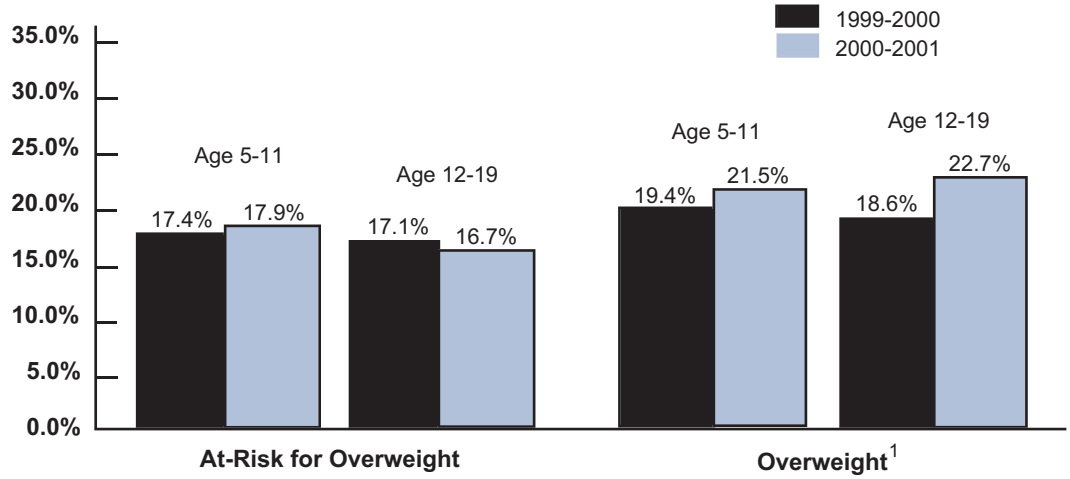
Figure 2: Percent of Students Aged 5-11 years and 12-19 Years Who are Underweight by School Year



Source: Centers for Disease Control and Prevention.

Figure 2 shows the percentages of children and adolescents who are underweight from the 1999-2000 and 2000-2001 school years. From the 1999-2000 school year to the 2000-2001 school year there appears to be no significant change in percentage rates for either age group.

Figure 3: Percent of Children Aged 5-11 (n=4,534 for 1999-2000; n=5,659 for 2000-2001) and 12-19 (n=1,239 for 1999-2000 and n=1,913 for 2000-2001) Who are At-risk for Overweight and Percent of Children Who are Overweight, by School Year



[1] Statistically significant at the 95% confidence level using exact binomial confidence intervals.

Source: Centers for Disease Control and Prevention.

Figure 3 shows that there was no statistically significant change in the percent at-risk for overweight among the two student populations for the 1999-2000 school year and the 2000-2001 school year. However, there was an increase in the percent of students in both age groups who were overweight when comparing the 1999-2000 school year to the 2000-2001 school year. In 1999-2000 school year 19.4% of the 5-11 year old students were overweight, compared to 21.5% in 2000-2001. In the 1999-2000 school year, 18.6% of the 12-19 year old students were overweight, compared to 22.7% in 2000-2001.

Figure 4: Percent of High School Students Who Describe Themselves as Overweight, 2001

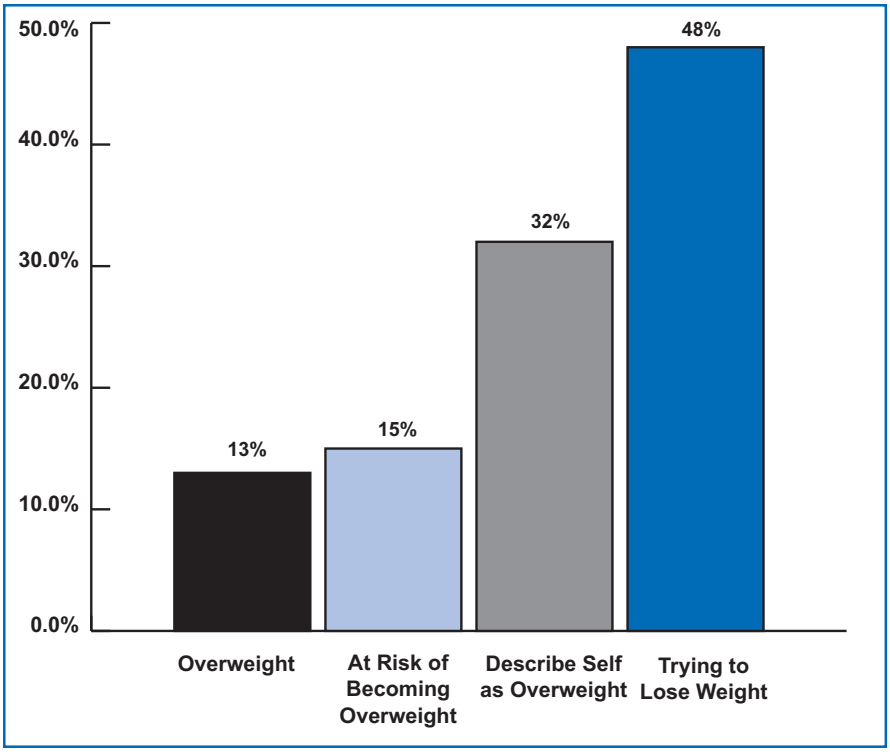
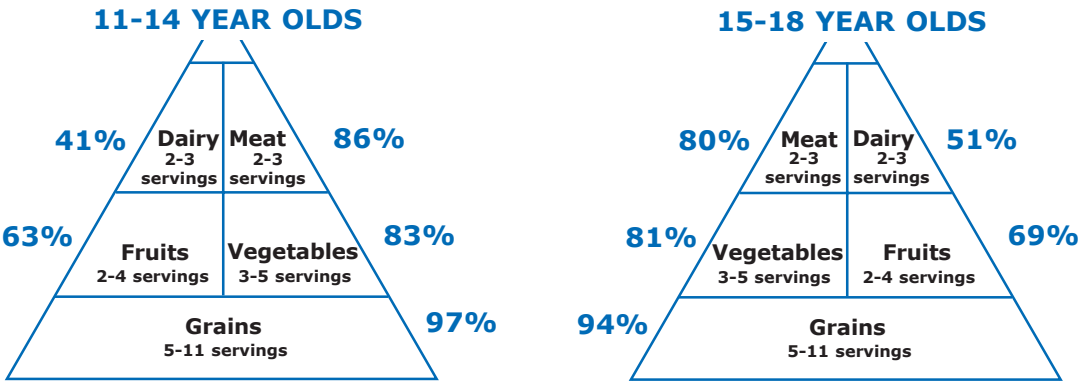


Figure 4 shows data from the Youth Risk Behavior Survey (YRBS), 2001. While 15% of high school students describe themselves at risk for becoming overweight, 48% of the students surveyed are trying to lose weight.

Dietary Intake

Since September 1999, dietary data intake information and height and weight measurements have been collected from at least 50% of Missouri 5th graders in schools that participate in the MSCHS Program. The dietary assessment is conducted through a semi-quantitative validated questionnaire designed to assess intake over the past four weeks. The aim of the assessment is to determine eating habits of children and possible associations of dietary factors with disease risks. The individual dietary intake analysis helps school health professionals provide nutrition guidelines to students. The aggregate data and analysis helps the Missouri Department of Health and Senior Services study trends to predict possible disease risk. The following shows the percent of students who do not eat the Food Guide Pyramid minimum recommended number of servings.



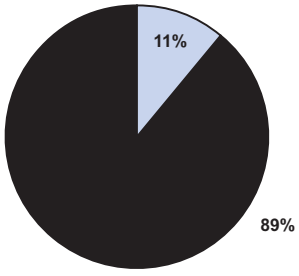
The full report is available on the MDHSS' web page at:
www.dhss.state.mo.us/dnhs_pdfs/R_OSEP_diet_intake_school-age_00-01.pdf

The results from the Youth Risk Behavioral Surveillance System from 1995 to 2001 show that the percentage of Missouri high school students who regularly eat five or more servings of fruits and vegetables has decreased from 23% to 18.7%.[35]

A key factor affecting dietary intake trends of Missouri school-aged children is the availability of competitive foods. Competitive foods are any foods sold in competition with NSLP/SBP meals. They may be sold in food service areas (where food is prepared, served, or eaten) during the meal periods only if all income from the sale of such foods accrues to the benefit of the non-profit school food service, the school or a student organization approved by the school. Competitive foods sold outside of the food service area are governed by local school district policy.

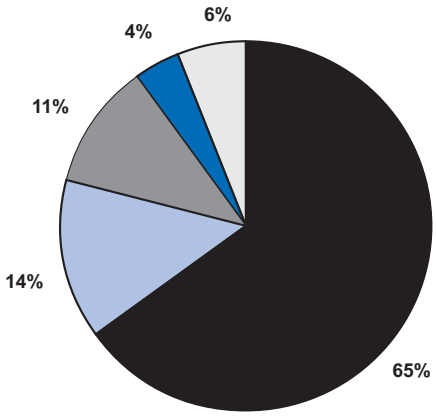
At many schools in Missouri, students buying meals can select either NSLP/SBP meals or items that compete. While studies show that NSLP/SBP meals do contribute to better nutrition, competitive foods tend to bring down the quality of the food environments at schools and discourage participation in NSLP/SBP meals.[33] [36]

11% of Missouri public secondary schools offer competitive, brand-name fast food each day for lunch.[37]



The sale of popular carbonated beverages represents an additional source of income to the schools. Many of the pouring rights contracts have provisions to increase the percentage of profits to schools when sales volume increases. There is a substantial incentive to promote soft drink consumption by adding vending machines, increasing the times during which they are available, and marketing the products to students.[36]

Sixty-five percent of Missouri public secondary schools receive a portion of proceeds from the sale of soft drinks, 11 percent receive incentives, 14 percent receive both a portion of proceeds and incentives, 4 percent sell soft drinks but receive nothing in return, and 6 percent do not sell soft drinks."[37]



Physical Activity

More than one-third of Missouri high school students do not participate regularly in vigorous physical activity.[35] Regular participation in vigorous physical activity drops from 73% of ninth grade students to 56% of twelfth grade students.[35]

As part of the Health and Physical Education, Missouri Assessment Program (MAP) all fifth- and ninth-grade students in Missouri who are enrolled in a physical education class are required to take a physical fitness assessment. This assessment determines if they can meet minimal fitness standards in four different health related fitness components. The data in Tables 3 and 4 show the percentage of girls and boys in fifth and ninth grades who do not meet Healthy Fitness Range Requirements on the Missouri Physical Fitness Assessment for the years 2000-2002.[38] The criteria used for this assessment is from both the President's Challenge and the Fitness Gram. The four required components are: Aerobic Capacity, Flexibility, Upper Body Strength and Abdominal Strength.

Moderate amounts of daily physical activity are recommended for people of all ages. Physical activity can be obtained in longer sessions of moderate intensity such as brisk walking for 30 minutes, or in shorter sessions of increased intensity, such as jogging or playing basketball for 15-20 minutes.[39]

The following chart is a summary of recommended physical activity goals for children, adolescents and adults.

Table 2: Physical Activity Goals [23 40]

	Vigorous Activity (Minutes)	Days per Week	Moderate Activity (Minutes)	Days per Week
Children	10–15	7	60	5–7
Adolescents	20	3	30	5
Adults	20	3	30	5–7

Many Missouri students do not meet these recommendations. The physical activity levels of Missouri children decline rapidly after the early teen years.

Table 3: Percentage of Girls in 5th and 9th Grades Who Do Not Meet Healthy Fitness Range Requirements on the Missouri Physical Fitness Assessment

Girls	**5th Grade**			**9th Grade**		
Year	2000	2001	2002	2000	2001	2002
Aerobic	39.0%	36.0%	36.8%	48.0%	40.9%	42.2%
Abdominal	29.0%	32.3%	28.6%	33.0%	30.1%	30.5%
Upper Body	44.0%	29.7%	40.7%	40.0%	27.8%	36.7%
Flexibility	39.0%	31.8%	29.6%	27.0%	27.3%	34.9%

The data in Table 3 show that failure to meet aerobic capacity requirements is highest in 9th grade girls. Failure to meet upper body strength is highest in 5th grade girls.

Table 4: Percentage of Boys in the 5th and 9th Grades Who Do Not Meet Healthy Fitness Range Requirements on the Missouri Physical Fitness Assessment

Boys	**5th Grade**			**9th Grade**		
Year	2000	2001	2002	2000	2001	2002
Aerobic	39.0%	37.4%	35.8%	34.0%	32.8%	35.1%
Abdominal	33.0%	32.4%	30.2%	31.0%	27.3%	29.2%
Upper Body	39.0%	36.6%	34.6%	28.0%	28.3%	31.1%
Flexibility	36.0%	35.1%	33.8%	31.0%	33.1%	35.5%

The data in Table 4 show that the most significant failure rate for 5th grade boys was in aerobic capacity. The 9th grade boys also had a high failure rate in aerobic capacity.

A copy of the Missouri Physical Fitness Manual which includes all scoring criteria can be accessed online at: www.DESE.state.mo.us; click on School Improvement, Curriculum, Health/Physical Education and finally Missouri Physical Fitness Manual.

Promoting Healthy Weight: A Coordinated Approach to School Health

The guiding principle of the Coordinated School Health (CSH) Program is that schools and communities can combine their resources to provide an integrated and systematic approach to meeting children's health needs. Everybody in a child's environment can contribute something, while no one can address a child's health problems effectively by working alone. One of the biggest benefits of CSH can be a closer working relationship between parents and schools. Working with parents, businesses, local health officials, medical and allied health care providers and other community groups, schools can form powerful coalitions to address the health needs of students. The Council of Chief State School Officers (CCSSO) found that staff interviewed from schools with a coordinated approach to school health associated this approach with higher test scores, more alert students, more positive attitudes, skill development and readiness to learn.[41]

The Missouri Coordinated School Health Coalition encourages schools to adopt the eight-component CSH model to address issues surrounding healthy weight for Missouri school-age children. The coalition acknowledges that schools cannot completely solve all weight-related problems faced by Missouri students. The primary role of schools in promoting healthy weight is prevention using the Eight-Component Model for a Coordinated School Health Program.

The Eight-Component Model for a Coordinated School Health Program

1. Promoting a healthy school environment means providing a safe physical facility and a healthy and supportive environment for learning.
2. Health education consists of a planned, sequential, K-12 curriculum that addresses the physical, mental, emotional, and social dimensions of health.
3. Nutrition services are responsible for offering a variety of nutritious and appealing school meals, maintaining an environment that promotes healthful food choices, and supporting nutrition instruction in the classroom and cafeteria.
4. Physical education is a planned sequential K-12 curriculum promoting physical fitness, movement skills, sports skills and lifelong physical activity.
5. Health services focus on prevention and early intervention, including the provision of primary care, access and referral to community health services, and the management of acute and chronic health conditions.
6. Counseling, psychological, and social services include school-based interventions as well as dependable links to private and public mental health services in the community.
7. Staff wellness provides health assessments, education, and fitness activities for faculty and staff members and encourages their greater commitment to promoting student's health by becoming positive role models.
8. Family and community involvement engages a wide range of resources and marshals support to enhance the health and wellness of students.

Schools are urged to work with their families, communities and policymakers to establish local policies and create environmental supports. The following guidelines for promoting lifelong physical activity and healthy eating are based on the eight components of the Coordinated School Health Model.

1. Healthy School Environment

- Provide a school environment where students and staff feel safe, comfortable and supported.
- Provide time within the school day for unstructured physical activity.
- Discourage the practice of withholding recess and other physical activity as punishment.
- Discourage the use of food as a punishment/reward.
- Assure that lunch is provided at reasonable times around mid-day.
- Give students adequate time to consume a complete meal, at least 10 minutes to eat breakfast and 20 minutes to eat lunch, beginning when the student is seated.
- Encourage school organizations to sell non-food items at fund-raisers.
- Encourage the use of non-food items as incentives.
- Avoid selling foods of low nutritional value.
- Provide opportunities for students to obtain healthy snacks during after-school activities.
- Assure safety equipment for physical activities.
- Assure food safety practices are in place.
- Develop and enforce policies regarding discrimination.
- Offer family activity nights to promote school and family wellness.
- Encourage administrators, teachers, food service staff and parents to serve as role models by practicing healthy eating on the school premises.

2. Comprehensive Health Education Curriculum

- Implement nutrition education from preschool through high school as part of a sequential, comprehensive, school health education curriculum designed to help students develop knowledge, attitudes and behaviors they need to maintain a healthy lifestyle.
- Feature active learning strategies and follow national health education standards for health education and instruction.
- Use evidence-based curriculum for teaching nutrition.
- Provide staff involved in nutrition education adequate pre-service and ongoing in-service training that focuses on teaching strategies for behavioral change.
- Collaborate with physical education teachers to reinforce the link between sound dietary practices and regular physical activity for weight management.
- Seek innovative opportunities to involve families in nutrition education curriculum at the elementary school level.
- Staff should act as role models and provide effective communication to families on how to improve eating behaviors.

3. Nutrition Services

- Assure that school meal menus for lunch and breakfast meet the *Dietary Guidelines for Americans*, and National School Lunch and Breakfast Program standards.[42 43 44 45]

- Assure that healthy and appealing foods are available in meals, a la carte items in the cafeteria, snack bars and vending machines, as classroom snacks, and at special events such as staff meetings and parents' association meetings.
- Encourage school food service to offer choices that exceed the minimum nutritional requirements for the NSLP/SBP.
- Promote awareness of the definition of foods of Minimal Nutritional Value that may be sold outside of the food service area.
- Encourage alternative commercial-free funding sources to supplement the school food services budget.
- Offer continuing education activities in nutrition education to food service personnel so that staff can reinforce classroom instruction through the school meal program.
- Integrate school food service with nutrition education and with other components of the comprehensive school health program to reinforce messages on healthy eating.
- Help young people develop knowledge and skills, not just facts.
- Give students repeated opportunities to practice healthy eating.
- Make nutrition education activities fun.
- Involve students, teachers, administrators, families and community leaders in delivering strong, consistent messages about healthy eating as part of a coordinated school health program.

Foods of Minimum Nutritional Value

1. Soda Water
2. Water Ices
3. Chewing Gum
4. Certain Candies, such as:
   - Hard Candy
   - Jellies and Gums
   - Marshmallow Candies
   - Fondant
   - Licorice
   - Spun Candy
   - Candy Coated Popcorn

4. Physical Education

- Encourage physical education teachers to attend professional development and in-service to promote high quality physical education instruction for all students using age appropriate teaching strategies based on best practices.
- Implement physical education curricula and instruction by certified physical education specialists that emphasizes enjoyable participation in a variety of age appropriate activities designed to foster the development of knowledge, attitudes, motor skills, behavioral skills and confidence needed to adopt and maintain a physically active lifestyle throughout the life cycle.
- Design Physical Education Curricula and Physical Education Programs around the Missouri Standards and Framework for Curriculum Development in Health and Physical Education (Healthy, Active Living K-12) and the MOAHPERD Exemplary Physical Education Program model.
- Use the Health/Physical Education MAP results and the Missouri Physical Fitness Assessment results as well as other programs and revise and update curriculum.
- Teach the Healthy Weight Concept and provide fitness education and assessment to help children understand, improve and/or maintain their physical well-being.
- Promote physical activity through all components of a coordinated school health program and develop links between school and community programs to encourage physical activity outside the school day.
- Provide daily opportunities for physical activity for elementary and middle school students.

5. Health Services

- Identify students with physical activity and/or nutrition-related problems and refer them to appropriate school or community-based services.
- Communicate with school staff about the widespread problem, in childhood and adolescence, of weight discrimination.
- Advocate for all students with special health care needs so they have an opportunity for full and safe participation in physical education.
- Link students to community physical activity programs and use community resources to support extracurricular physical activity programs.

6. Guidance and Counseling

- Work with staff to develop appropriate interventions related to social isolation and discrimination for overweight students.
- Promote healthy eating and physical activity as part of the total learning environment.
- Assure access or referral to assessments, interventions and other services for students with mental, emotional and social heath problems related to eating disorders.
- Identify community resources for physical activity and nutrition counseling.
- Consider unique abilities of students when scheduling physical education classes.
- Work with children, parents, and the school nurse to assure all children have opportunities to be physically active at school.

7. School Staff Wellness

- Provide health promotion programs for school faculty and staff.
- Encourage staff to serve as positive role models for students by demonstrating healthy physical activity and eating behaviors.

8. Family and Community Involvement

Families

- Be physically active role models, support children's participation in physical activity and include physical activity in family events.
- Limit childrens' television time to two (2) hours or less each day.[45]
- Advocate for physical education and activity and sound nutrition policies at school.
- Influence policies related to physical activity and nutrition by participating on the school health advisory committee.
- Participate on the school health advisory committee in order to identify opportunities for partnership and advocacy.
- Work with local policymakers and school officials to make the area around the school safe for children to walk or bike to school.
- Teach children about making healthy food choices when eating away from home.
- Walk or bike with your child to establish a Safe Route to School.
- Avoid restrictive eating practices that can result in the development of eating disorders.

Communities

- Provide a community environment that makes it easy and safe for children to walk, bike and be physically active close to home.
- Participate on the school health advisory committee in order to identify opportunities for partnership and advocacy to enhance the health and well-being of children.
- Provide a range of developmentally appropriate community sports and recreation programs that are attractive to children and families.
- Make physical activity programs accessible to all families with low incomes by providing transportation and appropriate equipment.
- Support after school programs that provide opportunities for active play.
- Partner with schools to use school facilities after school, and on evenings, weekends and holidays.
- Advocate for community health promotion programs that are linguistically and culturally appropriate for children and families of diverse backgrounds.
- Develop and offer adapted sports and recreation programs to meet the needs of children and youth with disabilities.
- Design zoning that preserves green space, and assures sidewalks, walking and bike paths and recreational facilities.
- Fund school programs at a level that supports physical education programs.
- Fund school food service programs at a level so that schools do not have to rely on sale of soft drinks and candy for revenue.
- Provide a safe environment for indoor and outdoor physical activity in the community.
- Promote the development and use of neighborhood parks and recreation facilities.
- Fund school extracurricular activities at an adequate level, or use non-food items to raise funds.

Faith-based Community

- Sponsor activities that provide opportunities for active play for children and families.
- Offer a healthy menu and snack options at faith-based and youth functions.
- Open facilities for after school physical activity programs.
- Model health promoting behavior to children.

Business Community

- Sponsor physical activity and fitness programs for employees and families.
- Partner with schools to promote community-wide health promoting behaviors that increase physical activity and healthy eating.
- Participate on a school health advisory committee to identify opportunities for partnership and advocacy.
- Develop flexible work leave policies that make parent participation in school activities an option for employees.

Health Care Community

- Routinely advise patients to be physically active and make healthy food choices.
- Include questions about physical activity and nutrition in interview questions.
- Routinely advise patients to maintain a healthy weight.
- Measure height and weight then plot BMI for-age at each health supervision visit.
- Communicate with school board members and policy makers the need for proactive policies for nutrition and physical activity programs in the school and community.

Public Officials

- Build an infrastructure that supports coordinated school health programs by encouraging state agencies to coordinate efforts to support healthy children and seek opportunities for collaboration and shared resources.
- Establish or work with existing advisory councils related to healthy children.
- Minimize categorical funding that discourages comprehensive, coordinated approaches to students' health and educational needs.
- Provide access to quality health services by requiring health insurance coverage for clinical preventative services and appropriate counseling about health behaviors.

State Agencies

- Collaborate with other agencies to maintain a state level infrastructure that supports local school/community programs that promote physically active children of healthy weight.
- Assure coordination of programs for schools, children, families and communities within and between agencies to increase efficiency and effectiveness of programs.
- Foster partnership development, collaboration, consensus and community guidelines for physical activity and good nutrition habits for everyone.
- Plan state programs that promote lifelong healthy habits such as walking, cycling and healthy eating.
- Provide technical assistance, data and training on physical activity and nutrition for schools, families, children, communities and policy makers.
- Support research on physical activity and nutrition.
- Assist with and conduct public awareness and social marketing campaigns that promote coordinated school health programs, increased access to physical activity and access to healthy food options.
- Monitor youth physical activity, fitness, and health risk behaviors.
- Promote community programs that increase access to and consumption of fruits and vegetables.

State Board of Education

- Require physical education in all school grades.
- Provide healthy food options on all school campuses.
- Require health education and certification in health education for those teaching health education.
- Provide on-going professional development opportunities and incentives for teachers to maintain and upgrade knowledge and skills regarding health education, physical education and other health promoting behaviors.

Local Boards of Education

- Adopt policies that support and enhance coordinated school health program and a healthy school environment.
- Partner with public health officials, the medical community and the school health advisory council to develop sound health promoting policies regarding physical activity and nutrition for children, families and staff.
- Promote consistency in health related messages among the school, home and community.
- Provide access for community members to physical activity spaces and facilities outside the normal school day.
- Offer school site health promotion programs for staff.
- Encourage school, family and community partnerships.
- Ensure adequate funding for physical education and school food service programs.
- Increase the local requirements for high school graduation to exceed the minimum state requirement for physical education and require at least one semester of health education.

RESOURCES

Coordinated School Health Approach

Changing the Scene
An action kit to help parents, teachers, school administrators, school food service professionals, and communities look at their school nutrition and physical activity environment and identify areas needing improvement. The booklet, *A Guide To Local Action*, helps schools begin the process with an assessment of the current school environment, develop a plan for improvement, and put the plan into action. The toolkit, including support materials, PowerPoint presentation and script, CD, transparencies, brochures, and video, may be ordered at no charge from the Team Nutrition website, www.fns.usda.gov/tn.

School Health Index 2nd Edition, 2001
The Centers for Disease Control and Prevention (CDC) developed the School Health Index (SHI) for Physical Activity and Healthy Eating and a Tobacco Free Lifestyle for Elementary and Secondary Schools. The School Health Index is based on the eight components of the Coordinated School Health Program and encourages the involvement of a diverse array of stakeholders both within the school and the community. This tool enables schools to identify the strengths and weaknesses of health promotion policies and programs, develop an action plan for improving student health and involve teachers, parents, students, policymakers and the community in improving school services. For ordering information or to view the SHI free of charge, go to: www.cdc.gov/nccdphp/dash/SHI/index.htm. Call toll free 888-231-6405.

Fit, Healthy, and Ready to Learn Series
Part 1: Physical Activity, Healthy Eating, and Tobacco-Use Prevention - A School Health Policy Guide, 2000. This resource provides policymaking guidelines for school officials to assure school health goals in the three areas listed in the title. Order from the National Association of State Boards of Education, 277 South Washington Street, Suite 100, Alexandria, VA 22314 (2000). Available at: www.nasbe.org/NASBE_Bookstore/safe_healthy.html.

Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People
Adapted Dec. 1998 by CDC. The full list of guidelines can be downloaded from CDC's website at: www.cdc.gov/nccdphp/dash/healthtopics/physical_activity/guidelines/index.htm.

Guidelines for School and Community Programs to Promote Lifelong Healthy Eating Among Young People
Adapted Sept. 1999 by CDC. The full list of guidelines can be downloaded from CDC's website at: www.cdc.gov/nccdphp/dash/healthtopics/nutrition/guidelines/index.htm.

Health is Academic: A Guide to Coordinated School Health Programs
Teachers College Press, 1234 Amsterdam Avenue, New York, NY 10027. This guide serves education, health, and social service professionals by providing a common template of practical actions to improve the educational performance and health of school age students. Available at: www.teacherscollegepress.com./administration_leadership.html.

Building Business Support for School Health Programs: An Action Guide, 1999
National Association of State Board of Education (NASBE). This action guide was developed to assist school health programs in building partnerships with local communities and businesses. Available at: www.nasbe.org/NASBE_Bookstore/safe_healthy.html.

School Health Advisory Council Guide
Developed by the Missouri Coordinated School Health Coalition, this guide helps school personnel to convene an interdisciplinary group to address school health issues. Includes suggestions and tools for membership, and an assessment tool for each component of the Coordinated School Health Model. Available at: www.dese.state.mo.us >Missouri School Improvement > Curriculum > Health/Physical Education.

Health Policy Coach
Provides tools and strategies for policy development in the eight components of Coordinated School Health. Available online from the California Center for Health Improvement at: www.healthpolicycoach.org.

Evidenced-Based Nutrition and Physical Activity Curricula

Coordinated Approach To Cardiovascular Health (CATCH) Expanded
An extensively studied curriculum with multiple component programs for students in grades 3-5 that includes: classroom curriculum for grades 3-5 (Hearty Heart, Go For Health, F.A.C.T.S. - a tobacco use prevention curriculum); physical education curriculum (CATCH PE); food service program (Eat Smart); and family component. New and expanded curricula to include grades K-2 and 6-8 physical education, Putting a Stop to Diabetes (P.A.S.T), are also available. Contact: Flaghouse, Physical Education & Recreation, 601 Flaghouse Drive, Hasbrouck Heights, NJ 07604. 800/793-7900. www.flaghouse.com

Planet Health
An interdisciplinary curriculum for students in grades 6-8 taught over a two-year period. Lessons focusing on decreasing television viewing, decreasing consumption of high-fat foods and increasing moderate and vigorous physical activity are integrated in four core subject areas and physical education. Contact: Human Kinetics, PO Box 5076, Champaign, IL 61825-5076. 800/747-4457. Available at: www.humankinetics.com.

Playing the Policy Game
A program guide to prepare teen leaders, grades 9-12 for advocacy in both their schools and communities on healthy eating and physical activity. Playing the Policy Game is one part of a multi-component high school-based intervention program called Food on the Run (FOR). FOR is organized by California Project LEAN (Leaders Encouraging Activity and Nutrition), a program of the California Department of Health Services and the Public Health Institute. A companion piece, Jump Start Teens, provides lessons on nutrition and physical activity. The lessons are designed to be integrated into existing high school classes covering topics such as reading food labels, cutting fat in fast food selections, planning a personal physical activity program, and analyzing advertising messages. A Food on the Run parent brochure is also available. Contact: California Project LEAN, P.O. Box 942732, MS-675, Sacramento, CA 94234-7320. Telephone: 916/323-4742. www.californiaprojectlean.org. Available at: www.caprojectlean.org.

SPARK Programs
Spark Programs resources include elementary Physical Education curricula (grades K-2 and 3-6), Self-Management curriculum (grades 4-6 nutrition, out of PE activity, limiting TV/video games), Middle School Physical Education curriculum, Active Recreation (after school programs, ages 5-14), and Early Childhood

(research pending 2004). Contact: SPARK, 6363 Alvarado Court, Ste. 250, San Diego, CA 92120. 800/ SPARK-PE. Available at: www.foundation.sdsu.edu/projects/spark.

Eat Well & Keep Moving
An interdisciplinary curriculum for teaching upper elementary school nutrition and physical activity for grades 4–5. The kit contains 44 lesson plans for target grades; a CD-ROM for printing lesson, units, and worksheets; school-wide campaigns for healthy lifestyle messages (including less TV watching); and reproducibles. For information contact: Harvard Prevention Research Center, Harvard School of Public Health, 677 Huntington Avenue, 7th Floor, Boston, MA 02115. 617-432-3840. To order, contact www.humankinetics.com.

Healthy Body Image: Teaching Kids to Eat and Love Their Bodies Too!
A comprehensive resource manual with eleven scripted lessons for grades 4–6. Healthy Body Image moves beyond prevention of eating disorders to the much larger need to prevent risk factors that lead to disordered and unhealthy eating. This new model, to be completed over four weeks, challenges prevalent cultural norms. To order contact Healthy Body Image, Eating Disorders Awareness & Prevention, 603 Stewart St., Suite 803, Seattle, WA 98101, (phone) 206-382-3587, (fax) 206-829-8501.
www.nationaleatingdisorders.org

National Prevention Recommendations

Healthy People 2010
The prevention agenda for the Nation. It is a statement of national health objectives designed to identify the most significant preventable threats to health, and to establish national goals to reduce these threats. Overweight and physical activity are grouped as two of the ten leading health indicators. The leading health indicators reflect the major public health concerns and opportunities in the United States. To view the full Healthy People 2010 document, including all the Leading Health Indicators visit www.healthypeople.gov.

The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity (December 2001)
The Call to Action has five overarching principles:

- Promote recognition of overweight and obesity as major public health problems.
- Assist Americans in balancing healthful eating with regular physical activity to achieve and maintain a healthy or healthier body weight.
- Identify effective and culturally appropriate interventions to prevent and treat overweight and obesity.
- Encourage environmental changes that help prevent overweight and obesity.
- Develop and enhance public/ private partnerships to help maintain this vision.

The Surgeon General stresses in his report that, in order for the five overarching principles to be accomplished, there must be a coordinated effort across diverse settings with no setting being able to address the problem alone. The five settings are families and communities, schools, health care, media & communications and worksites. The key actions are organized in a framework called CARE: (Communication, Action, Research, and Evaluation). To view the full report visit the Surgeon General's web site at www.surgeongeneral.gov/topics/obesity/.

Nutrition and Your Health: Dietary Guidelines for Americans, 2000
In its 5th edition, available at the Federal Consumer Information Center - OIA, P.O. Box 100, Pueblo, CO 81002, Item: 147G. Available at: www.usda.gov/cnpp.

National School Lunch Program
Since 1946, the National School Lunch Program has made it possible for schools to serve nutritious, low cost lunches that provide a significant contribution to the physical and mental development of children. In 1995, the United States Department of Agriculture (USDA) implemented the School Meals Initiative (SMI) for Healthy Children. The SMI required schools to serve meals (lunches and breakfasts) that meet specific minimum standards for key nutrients and calories and to comply with the recommendations of the Dietary Guidelines for Americans. For information including competitive food policies by state, menu planning guidance, and accommodating children with special dietary needs in the school setting, visit: www.fns.usda.gov/cnd/Lunch.

Additional Resources

Adolescent Nutrition: A Springboard for Health
Supplement to the Journal of the American Dietetic Association, March 2002, supported by Maternal and Child Health Bureau, Health Resources and Services Administration, U.S. Department of Health and Human Services.

American Cancer Society
The ACS publishes the Nutrition and Physical Activity Guidelines to serve as a foundation for its communication, policy, and community strategies and ultimately, to affect dietary and physical activity patterns among Americans. These guidelines are developed by a national panel of experts in cancer research, prevention, epidemiology, public health and policy, and as such, they represent the most current scientific evidence related to dietary and activity patterns and cancer risk. Available at: caonline.amcancersoc.org/cgi/content/full/52/2/92.

American Heart Association
The American Heart Association has numerous Programs, Heart & Stroke Encyclopedia entries and Scientific Statements under the section Children: Heart Disease and Health related to nutrition and exercise
Or you may contact the American Heart Association for information at American Heart Association, National Center, 7272 Greenville Avenue, Dallas,TX 75231 or by calling 1-800-AHA-USA-1 (1-800-242-8721).
Also available at: www.americanheart.org.

American School Food Service Association
Creating Policy for Nutrition Integrity in Schools, Revised edition, 1994. Keys to Excellence, Standards for School Food Service. Available at: www.asfsa.org.

Body Mass Index-for-Age Growth Charts
This site includes self-directed, interactive training modules for health care professionals using pediatric growth charts in public health and clinical settings. The modules, available at no cost, are designed to enhance professional use and interpretation of the new growth charts released in May 2000. Available at: www.cdc.gov/nccdphp/dnpa/bmi/bmi-for-age.htm.

Child Nutrition and Health Campaign
American Dietetic Association, 216 West Jackson Boulevard, Chicago, IL 60606, 1-800-877-1600. Position papers include:

- Child and adolescent food and nutrition programs
- School-based nutrition programs and services
- Dietary guidance for healthy children aged 2-11 years

Available at: www.eatright.com/pr/child.html.

Children and Teens Afraid to Eat: Helping Youth in Today's Weight-Obsessed World
(3rd ed.) by Berg FM, Healthy Weight Network (2001). Available at: www.healthyweight.net.

Children's Activity Pyramid
Available at: muextension.missouri.edu/xplor/hesguide/foodnut/gh1800.htm.

Dietary Intake Summary Report—The Missouri School-Age Children's Health Services Program, School Year 2000-2001
Missouri Department of Health and Senior Services, Division of Nutritional Health and Services. Available at: www.dhss.state.mo.us/MissouriNutrition.

Eating Disorders Resources
Bulimia.com specializes in publications about anorexia nervosa, bulimia, and binge eating, plus related topics such as body image. Free articles about eating disorders, newsletters, links to treatment facilities, organizations, and other websites are also offered. Available at: www.bulimia.com.

Five-A-Day Program
Produce for Better Health Foundation, 5301 Limestone Road, Ste 101, Wilmington, DE 19808, (302) 235-2329. Available at: www.5aday.com./ National Cancer Institute/5 A Day Program, Public Inquiries Office: Building 31, Room 10A03, 31 Center Drive, MSC 2580, Bethesda, MD 20892-2580, (301) 435-3848, 1-800-4-CANCER. Available at: www.nci.nih.gov.

- 5-A-Day: Time To Take Five: Eat 5 Fruits and Vegetables Every Day (brochure)
- Action Guide for Healthy Eating (brochure)
- 5-A-Day My Way: Kid friendly puzzles, etc.
- Snack Your Way to 5-A-Day (brochure)

Food Guide Pyramid
U.S. Department of Agriculture, Food Guide Pyramid: A Guide to Daily Food Choices. Available at: www.usda.gov/cnpp/ and www.nal.usda.gov/fnic.

Healthy Schools Summit: Taking Action for Children's Nutrition and Fitness
A collaboration of national education and health groups taking action steps to improve children's health and educational performance. These groups are committed to promoting knowledge, attitudes, and behaviors among our nation's children that will improve their health, academic achievement, and overall well being. It is essential to form public-private partnerships among the various parties who influence the school environment and curriculum, and those who can influence the adoption of policies and practices that support healthier lifestyles. For additional information on the Healthy Schools Summit, visit www.actionforhealthykids.org/index.htm.

Kids Walk-to-School: A Guide to Promoting Walking to School
U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition and Physical Activity, Mailstop K-46, 4770 Buford Highway, NE, Atlanta, GA 30341-3717. Available at: www.cdc.gov/nccdphp/dnpa/kidswalk/index.htm.

Missouri's Youth Risk Behavior Surveillance Survey
Available at: www.cdc.gov/yrbss.

National Association of State Boards of Education
How Schools Work and How to Work With Schools: A Guide for Health Professionals, 1992
Available at: www.nasbe.org.

National Eating Disorders Association
A nonprofit organization dedicated to the elimination of eating disorders and body dissatisfaction. It provides prevention programs for a wide range of audiences, publishes and distributes educational materials, operates a toll-free eating disorders information and referral line (1-800-931-2237, Monday - Friday, 8am to 5pm, Pacific Standard Time). National Eating Disorders Association, 603 Stewart St., Suite 803, Seattle, WA 98101. (206)382-3587. Available at: www.nationaleatingdisorders.org.

National PTA
National Standards for Parent/Family Involvement Programs. Building Successful Partnerships: A Guide for Developing Parent and Family Involvement Programs, 2000 (National Education Services, 2000). Available at: www.pta.org/programs.

Promoting Physical Activity: A Guide for Community Action
Center for Disease Control and Prevention, Human Kinetics Publishing, P.O. Box 5076, Champaign, IL 61825-5076, 1-800-747-4457. Available at: www.humankinetics.com. (Go to Product Research by ISBN/ISSN and type in the following no. 0736001522.)

Resource Guide for School-based Programs to Prevent Chronic Diseases
Missouri Department of Health and Senior Services, Division of Chronic Disease Prevention and Health Promotion, Bureau of Health Promotion, available by contacting Bureau at 573-522-2820. Available at: www.dhss.state.mo.us/SmokingAndTobacco/ResourceGuidebook.pdf

Weight Control Information Network (WIN)
1 Win Way, Bethesda, MD 20892-3665, 1-800-WIN-8098 or online at: www.niddk.nih.gov/health/edu.htm#win.

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- *5-A-Day: Time to Take Five: Eat 5 Fruits and Vegetables every Day* (brochure)
- *Action Guide for Healthy Eating* (brochure)
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